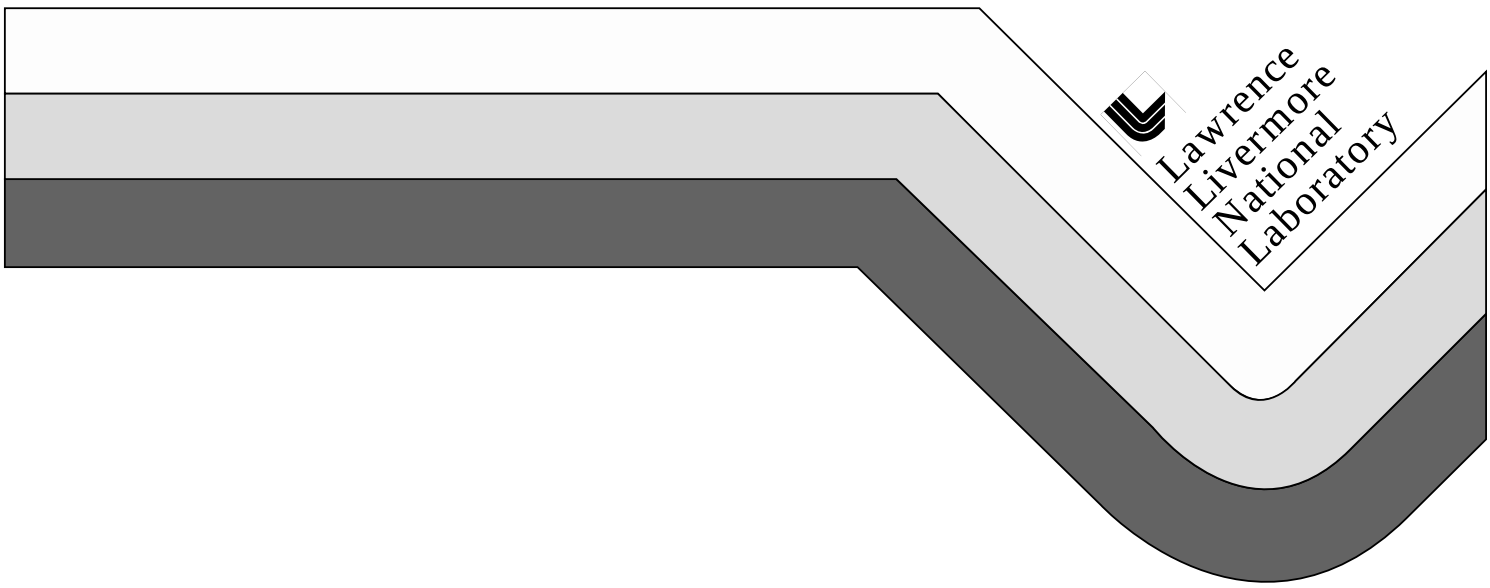
UCRL-MA-118782

The JCM Data Manager's Guide

Version 2.2

Mike Uzelac

September 1994



Work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract W-7405-ENG-48.

The JCM Data Manager's Guide

Version 2.2

September 1994

Contents

The JCM Data Manager's Guide

Introduction

This guide contains a description of the JCM data files provided with a new installation and the procedures for modifying and adding data files to this data base. The JCM Shell provides an interface between the user and the JCM package and facilitates access to the different utilities and data files within this package. The data files are stored either in the Master Storage Area (MSA) or in a User's Work Space (UWS). When a User runs JCM or its utilities, the Shell allows the user to select data files from either the MSA or the UWS. If the user modifies a master file or creates a new file, the Shell only allows the user to store the file in his UWS. Each user is responsible for maintaining the files within his UWS and the Shell provides the options necessary to review, print, purge and delete these files.

The maintenance of the data files within the MSA is not currently provided by the Shell. Each JCM installation should have some person(s) designated as the Data Manager(s) and given the responsibility of maintaining these files. Normally a Data Manager account is created which allows the Data Manager to log onto the VAX in the appropriate directories and with the necessary privileges. The Data Manager then uses the normal VAX VMS file management procedures to copy, rename, purge and delete the files as necessary. This guide describes the directory structure and gives examples of the typical tasks which should be performed by the Data Manager.

User Work Space

As described in the JCM Simulation Manual, the JCM Shell provides each JCM user with a set of eight directories called the UWS. Except for the FRAMIS directory, these directories are normally empty when JCM is installed. As explained in the JCM Post-Processing Guide, each user's FRAMIS directory normally contains an identical set of FRAMIS command and macro files. The JCM input files created by the user with the JCM utilities and the JCM output files created when the simulation is run are stored in the UWS. Shell options provide each user the ability to review, print, purge and delete the files in his UWS.

The following is a list of the sub-directories on disk JCM$USR which comprise the UWS for user "01" in JCM version "22".

[JCM01.DATA22.BATCH] - batch command files
[JCM01.DATA22.CAC] - CAC archive files
[JCM01.DATA22.FRAMIS] - FRAMIS command, macros, data bases and reports
[JCM01.DATA22.JCM] - JCM output data, replay files and AWS files
[JCM01.DATA22.PHPK] - pkfiles and master pkfiles 50 to 99
[JCM01.DATA22.SCENARIO] - scenario data files 50 to 99
[JCM01.DATA22.SYMBOL] - tsymbol files 50 to 99
[JCM01.DATA22.TERRAIN] - terrain and screen files 50 to 99

Master Storage Area

The Shell also provides the user access to eight additional directories called the MSA. Users can read but cannot write or delete files from these directories. Normally these directories contain a predefined set of JCM data when JCM is installed. As new data files are acquired or created it will become necessary to update the MSA. Depending upon the local installation, a Data Manager or the System Manager will have the account or privilege to review and modify the MSA files and to copy files from the UWS to the MSA.

The MSA is comprised of the following directories located on the JCM$DISK: disk.

[JCM22.DATA.AWS] - AWS LEGEND.DAT file
[JCM22.DATA.CAC] - CAC data files
[JCM22.DATA.MESSAGE] - help message data file
[JCM22.DATA.PHPK] - pkfiles and master pkfiles 1 to 49
[JCM22.DATA.REPLAY] - replay data files
[JCM22.DATA.SCENARIO] - scenario data files 1 to 49
[JCM22.DATA.SYMBOL] - tsymbol files 1 to 49
[JCM22.DATA.TERRAIN] - terrain and screen files 1 to 49

Predefined Input Data Files

Each of the MSA directories normally contains an information listing(s) (Z*.LIS) created with the VAX editor which describes the data files in that directory. As the master files are changed, the Data Manager should update these files to reflect changes.

PH/PK

The MSA PHPK directory contains one or more unclassified master PH/PK database and several pkfiles for the predefined scenarios. The PH/PK master database(s) (MDB) consists of three files PHDATA##.DAT, PKDATA##.DAT and PKINDEX##.DAT. The pkfiles included were created from the MDB and are numbered the same as their corresponding scenario (PKFILE01.DAT is used with SCENAR01.DAT). ZPLATFORMS_*.LIS and ZMUNITIONS_*.LIS are example information lists of the platforms and munitions available in the MDB. These lists define the platform and munition PHPK index codes which must be used in the scenario CHAR file to represent each of the munition and platform types. As users modify or create their own MDB files similar lists should be maintained to document changes.

SCENARIO

The MSA SCENARIO directory contains several predefined and example scenarios. ZSCENARIOS.LIS is an example information list which describes the scenarios found in the MSA.

SYMBOL

The MSA SYMBOL directory contains several symbol files which are examples of three different types of symbols (1) silhouettes, (2) units, and (3) weapons and equipment. In all symbol files, symbols 81 through 100 are special symbols used by JCM itself (91 - 100) or by the Analyst WorkStation (AWS) (81 - 90). ZSYMBOLS.LIS, TSYMBOL01.LIS, TSYMBOL10.LIS, and TSYMBOL22.LIS are examples of the information files found in this directory which give a summary and detailed descriptions of each symbol file.

TERRAIN and SCREEN

The MSA TERRAIN directory contains both the terrain and screen data files for an assortment of terrain. These files come in pairs and are normally named accordingly (TERRAIN01.DAT/SCREEN01.DAT). The terrain file is the actually digital data used by the JCM simulation and the screen file is the data used to generate graphic display. ZTERRAIN.LIS is an example of the information files found in this directory which give a summary description of each terrain file. Available disk storage space or other user requirements at particular installations may limit the amount of terrain kept on line.

Updating the MSA Directories

Occasionally it will be necessary to modify or add files to the MSA. Typically this is done when new data is acquired or users have created data that should be saved or made available to other users by moving it to the MSA. The point to remember when moving these files is that user files are numbered from 50 to 99 and MSA files must be numbered from 1 to 49.

Let's assume first that the Data Manager has logged on and is located in the MSA root directory JCM$DISK:[JCM22.DATA] and has privilege to read, write and delete files in all the sub-directories. Let's say that User01 has created a new SCENAR50.CHAR that we would like to move to the MSA and rename it SCENAR10.CHAR. First the Data Manager should set the default directory to the SCENARIO directory:

> **SET DEFAULT [JCM22.DATA.SCENARIO]**

The following command will copy SCENAR50.CHAR from the JCM01 account to the MSA and rename it SCENAR10.DAT.

>COPYJCM$USR:[JCM01.DATA22.SCENARIO]SCENAR50.CHAR
[]SCENAR10.CHAR

If JCM01 has created a new PKFILE50.DAT for this scenario, the Data Manager should also copy it into the MSA. The Data Manager should first set the default directory to the PHPK directory:

>SET DEFAULT [JCM22.DATA.PHPK]

The file can then be copied and renamed with the following command:

> COPY JCM$USR:[JCM01.DATA22.PHPK]PKFILE50.DAT []PKFILE10.DAT

Similarly, the Data Manager could move other scenario, pkfile, symbol, terrain or screen files from other user accounts to the MSA by using the appropriate directory and file names. To aid in keeping track of data files after making changes, the Data Manager should update the Z*.LIS files in each directory or develop some other method of identifying files.

Copying Data Files from One User to Another User

Occasionally it is necessary or desirable to copy data files directly from one user to another. This is necessary for those data file types (CAC, FRAMIS, and JCM) which are not stored in the MSA. The CAC archive files are only stored in the UWS and must reside in the user's CAC directory if they are to be used either with one of the user's scenarios or with a scenario from the MSA. The FRAMIS command (*.COM), macro (*.MCR) and report (*.REP) files are stored in each user's FRAMIS directory. The JCM output files (DATEVENT.DAT, DATSPOT.DAT, DATSTAT.DAT, and DATLOSS.DAT) and the Tek replay files (TEKREPLAY.DAT) are also stored in each user's JCM directory. If any of these files are modified or created by one user, a copy must be placed in another user's directory before it can be used.

There are two methods of copying these files. Either the Data Manager can do it using a method similar to that described above or a user can do it directly with DCL. Both methods will be described but only knowledgeable users should be allowed to use DCL.

The Data Manager can move files directly from one user to another by merely copying files from one directory to another. For example, to move a set of CAC archive files (BLUE_1_14.CAC, BLUE_1_14.CAC_USR, RED_1_14.CAC, RED_1_14.CAC_USR) from JCM01 to JCM02 the following command would be used:

> C O P Y J C M $ U S R : [J C M 0 1 . D A T A 2 2 . C A C] * 1 4 . C A C * JCM$USR:[JCM02.DATA22.CAC]

JCM02 could copy the same files into his CAC directory using DCL in the following manner. From the Top Level JCM Menu the user would type **DCL** and press **RETURN**. The user must then set his default directory to the CAC directory:

> SET DEFAULT [.DATA22.CAC]

The following command would then copy the files:

>COPY [JCM01.DATA22.CAC]*14.CAC* []

Printing JCM Output Files During Run Time

When a JCM simulation is started and a report interval has been requested the three output files, DATSPOT.DAT, DATSTAT.DAT and DATLOSS.DAT, are opened in the user's

JCM directory. At the start of the simulation and at each report interval, the latest reports are appended to the DATSPOT.DAT and DATSTAT.DAT. Also, at each report interval, a new version of the DATLOSS.DAT is written. After the simulation has ended, the user can review, post process or print the appropriate files from within the Shell.

The DATSPOT.DAT and the DATLOSS.DAT files can also be reviewed or printed by the Data Manager or another user while the simulation is running. The DATSPOT.DAT file is opened while it is being updated and then closed until the next report period. A new DATLOSS.DAT file is opened and then closed at each report interval. Once these files are closed they can be edited, copied or printed from another terminal by the Data Manager or another user. Because the DATSPOT.DAT file must be reopened at the next report period, it is recommended that it be copied to another file before editing or printing. If the DATSPOT.DAT is opened by another user at the time of the next update, the JCM simulation will stop and wait until the file is closed. The latest version of JCM01's DATLOSS.DAT would be printed with the following command:

> **PRINT JCM$USR:[JCM01.DATA22.JCM]DATLOSS.DAT**

Important Points

CAC

CAC archive files are mapped to a particular terrain file by the two digit number before the extension. For example, BLUE_1_14.CAC is mapped to TERAIN14.DAT. If the number of a terrain file is changed, the CAC file may be renamed to maintain this mapping. If the coordinates of a CAC file and its terrain file don't agree, a warning message will appear on the Tektronix when JCM is run and the CAC messages may not appear.

FRAMIS

FRAMIS command and macro files must be named version one (*.COM;1, *.MCR;1). When these files are created and modified within the Shell they are automatically renamed to version one. If these files are copied it is possible to create versions other than *;1 and they must be purged and renamed version one. The FRAMIS files *.FRM are tables in the database named with the same four character prefix. For example, TESTSHOTS.FRM is the data for the table named SHOTS in the database TEST. If you want to move a FRAMIS JCM database to another user, you must move DATEVENT.DAT and DATSPOT.DAT to the new user's JCM directory and create a new database from within the Shell. If the *.FRM files were moved to the new user's FRAMIS directory, the database would not appear in the new user's catalog of databases.

JCM History Files

The JCM output files DATEVENT.DAT, DATSPOT.DAT and DATSTAT.DAT are opened when JCM is initialized and each file is named with the next higher version number. The version number of each file depends upon the version number of any files previously existing in the directory. Care should be taken when copying or renaming these files to maintain the output files as a set.

Master PHPK Data Base

A master PHPK database consists of three files PHDATA##.DAT PKDATA##.DAT and PKINDEX##.DAT. When copying or renaming these files, care should be taken to maintain them as a set.

Terrain and Screen Files

The TERAIN##.DAT and the SCREEN##.DAT files should be named with the same suffix to maintain their pairing. When copying or renaming terrain files, care should be taken to keep the proper versions of the terrain and screen files paired together. For example, if a terrain file was modified by adding a river, it would be possible to pair up the new terrain file with the old screen file. In this case, when JCM was run the river would not appear on the screen but would actually be in the database and affect the simulation.

Technical Information Department • **Lawrence Livermore National Laboratory**
University of California • Livermore, California 94551